ISOLATION OF GRAM-NEGATIVE BACTERIA FROM BEACH SAND OF PORT DICKSON

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Final Year Project Report Submitted in Partial Fulfilment of the Requirements for the Degree of Bachelor of Science (Hons.) Biology In the Faculty of Applied Sciences Universiti Teknologi MARA

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TABLE OF CONTENTS

ABSTRACT

ISOLATION OF GRAM-NEGATIVE BACTERIA FROM BEACH SAND OF PORT DICKSON

Sand is a loose granular material blanketing the beaches, riverbeds and desert of the world. However, beach sand is the reservoir of the various type of microbes. The transmission of infectious diseases is caused by the direct exposure of microbes from the sand within the beach environment. The purpose of this study is to isolate and identify Gram-negative bacteria from the beach sand using a biochemical test. The wet sand and dry sand samples were obtained from the Telok Kemang beach early in the morning. Enrichment of the bacteria samples was done in nutrient broth. Then, enrichment broth was diluted and spread on the selective and differential agar of Eosin Methylene Blue agar, Salmonella-Shigella agar and Thiosulphate Citrate Bile Salts Sucrose agar. The IMViC test and gram staining were proceeded for the identification of the bacteria. *Klebsiella* spp. was the only bacteria found in both wet and dry sand of Telok Kemang beach while *Proteus* spp. found in wet sand. Respectively, these bacteria can lead to the skin irritation, infection of urinary and gastrointestinal tract. Thus, the results obtained can increase the awareness among the people on the existence of the bacteria in beach sand. The proposed bacteria may be further identify using 16s rRNA via Polymerase Chain Reaction (PCR) in order to categorized the isolates up to specific species.